extracting the specific probes that are hybridized by separation from their target, and

detecting the extracted probes and measuring the amount thereof or their respective amounts.

2. (Amended) A method according to Claim 1, wherein said at least one specific probe is chosen among the group consisting of Nb 1000 (SEQ ID N°1).

3. (Twice-Amended) A method according to Claim 1, further comprising contacting said microorganisms present in said sample with an universal probe to normalize results.

4. (Amended) A method according to Claim 3, wherein said universal probe is chosen among the group consisting of S Univ-1390 SEQ ID N°3) and S Bac 338 (SEQ ID N°4).

5. (Twice-amended) Method according to Claim 3 wherein said specific or said universal probe is a *r*RNA-targeted probe.

6. (Twice-amended) A method according to Claim 1, wherein said microorganisms in said sample are extracted from said sample by centrifugation.

7. (Twice-amended) A method according to Claim 1, wherein said contacting is performed followed by fixation of said whole cells.

8. (Amended) A method according to Claim 7, wherein fixation of the cells is achieved by incubation of the cells in a solution of less than 10% paraformaldehyde for 3 to 12 hours at 4 °C.

9. (Twice-amended) A method according to Claim 7, wherein said fixation is followed by a dehydration step, prior to said contacting step.

10. (Amended) A method according to Claim 9, wherein the dehydration is performed by placing said sample in contact with at least one ethanol solution.

11. (Twice-amended) A method according to Claim 1, wherein said contacting is performed by placing said sample in contact with said specific probe in the presence of a hybridization solution comprising a denaturing agent at a concentration of from 0.001% to 0.1%, Tris-HCl with a pH of about 8 at a concentration of from 0.001 M to 0.1 M; and a salt at a concentration of from 0.1 M to 1.5 M.

12. (Twice-amended) A method according to Claim 1, wherein contacting is performed for an incubation time of about 10 minutes to about 2 hours, and at an optimal hybridization temperature.

13. (Twice-amended) A method according to claim 1, wherein extracting of said specific probe is performed following removal of excess and unbound specific probe or of non-specifically associated probe material by contacting with a wash solution comprising a denaturing agent and a salt at concentrations appropriate for achieving the stringency necessary for the removal of non-specifically associated probe.

14. (Twice-amended) A method according to Claim 1, wherein extracting of the hybridized probes includes adding a denaturing agent to denature the probe-target complex, and at a temperature higher than the melting temperature of the specific probe under consideration.

15. (Amended) A method according to Claim 14, wherein the denaturing agent is formamide.

16. (Twice-amended) A method according to Claim 1, wherein said extracted probes are concentrated prior to the measurement of the amount thereof or of their respective amounts.

17. (Twice-amended) A method according to Claim 1, wherein said detecting and amount measurement of the extracted probes includes detection and amount measurement of a label associated or incorporated into the extracted probes, wherein the label is a radioactive, chemiluminescent or fluorescent label.

18. (Twice-amended) A method according to claim 1, wherein said sample is taken from fluids selected from natural water, industrial water, industrial effluent, municipal wastewater, industrial sludge, thermal mud, food liquid or gel, fermentation media, air, gas, aerosol, a sample taken from a building ventilation duct or air conditioning duct, a sample of food solid, a sample of soil, a sample from medical apparatus, or is a human or animal sample selected from blood, urine, vaginal or intestinal flora.

B1 cont'd

19. (Twice-amended) A method according to Claim 1, wherein it is used in combination with a process for triggering an alarm in connection with quality, safety and/or sanitary monitoring of the product from which said sample has been obtained.

20. (Twice-amended) A method according to Claim 1, wherein it is used in *in vitro* diagnosis of an infectious disease.

21. (Twice-amended) A method according to Claim 1, wherein it is used in the automatic or feedback control of a microbiological process such as methane fermentation of liquid manure, treatment of organic effluents, sewage treatment process such as treatment by activated sludge.

22. (Twice-amended) A method according to Claim 1, wherein it is used in the automatic or feedback control of a process relating to the removal or prevention of the development of microorganisms.

23. (Twice-amended) A method according to Claim 1 wherein it is applied in the detection of foam formation during the implementation of activated sludge processes and/or the feedback control of a method relating to the removal or prevention of the said foams.

Please add new claims 24-30

24. (New) A method according to claim 10, wherein the dehydration comprises a series of ethanol solutions of increasing concentrations.

25. (New) A method according to claim 11, wherein said denaturing agent concentration is on the order of 0.01%, said Tris-HCl concentration is on the order of 0.02 M, and said salt concentration is on the order of 0.9 M.

26. (New) A method according to claim 11, wherein said denaturing agent is sodium dodecyl sulfate and said salt is sodium chloride.

27. (New) A method according to claim 13, wherein said denaturing agent is sodium dodecyl sulfate and said salt is sodium chloride.

28. (New) A method according to claim 17, wherein said label is fluorescein.

29. (New) A method according to claim 8, wherein said fixation solution contains about 4% paraformaldehyde.